

TABLE 7
SRP RADIOACTIVE RELEASES TO THE ATMOSPHERE
BY NUCLIDE AND YEAR

Estimates of the dispersion of radioactive material to the atmosphere were based on the SRL meteorological data base covering a period of two years. Annual average dilution factors were determined as a function of azimuth and distance and applied to yearly release values. The entire annual release is assumed to occur at the midpoint of each year. Decay corrected values apply to the end of each year.

Dispersion estimates of particulate releases can be significantly affected by such parameters as gravitational settling velocity, material density, and particle size distribution. There has not been a sufficient amount of data accumulated to date to define these parameters adequately. Particle size distributions of various uranium and transuranium forms ($^{238}\text{PuO}_2$, $^{239}\text{PuO}_2$, etc.) have been determined at SRL. However, the particle size distribution of a given material may vary greatly depending on the conditions of release. Vertical settling velocities in the atmosphere are also expected to deviate from the prediction of gravitational settling velocities by Stokes law due to atmospheric turbulence.

To facilitate estimates of particulate deposition and to provide an inventory of material on and off-site, the following assumptions were made:

- Measured particle size distributions of the transuranium forms apply to atmospheric releases for that particular form. With the exception of $^{238}\text{PuO}_2$ the size distributions were not sufficiently different to warrant individual treatment in view of other uncertainties.
- Particle density is 6.9 g/cm^3 for all uranium and transuranium oxide forms.
- Gravitational settling velocities as determined from particle size and density input to Stoke's law reasonably approximate vertical settling velocities in the atmosphere.
- Particulates other than the uranium and transuranium forms have a vertical settling velocity of 1.0 cm/sec .

Under these assumptions it was estimated that about 50% of the ^{239}Pu released from SRP was transported off-site. Due to a marked difference in the particle size distribution, the fraction of ^{238}Pu to be transported off site was estimated to be about 85%. If a particle density of 11.5 g/cm^3 were assumed instead of 6.9 g/cm^3 the fraction of ^{239}Pu estimated to be transported off-site would be reduced to about 25%.

TABLE 7 (Continued)

Alpha^a (unidentified)

YEAR	ANNUAL RELEASE, CI
1954	
1955	
1956	
1957	
1958	
1959	
1960	
1961	2.20E-04
1962	3.00E-04
1963	2.42E-04
1964	—
1965	1.40E-03
1966	3.90E-04
1967	5.00E-04
1968	5.00E-04
1969	4.60E-04
1970	3.00E-04
1971	5.00E-04
1972	—
1973	2.79E-05
1974	7.40E-05
1975	2.40E-05

- a. Gross alpha curies are unidentified alpha-emitting radionuclides; curie content is based on counting of air sample filters on an instrument using ^{239}Pu as a calibration source. These values are not corrected for decay. Until 1961, alpha emitters were reported as ^{239}Pu or $^{235},^{238}\text{U}$.

TABLE 7 (Continued)

Beta^a (unidentified)

YEAR	ANNUAL RELEASE, CI
1954	
1955	3.39E 01
1956	8.43E 00
1957	1.67E 00
1958	1.00E-02
1959	4.90E-01
1960	8.37E-02
1961	9.82E-02
1962	3.13E-01
1963	2.23E-01
1964	6.15E-02
1965	9.34E-02
1966	1.29E-02
1967	1.36E-02
1968	4.10E-03
1969	1.14E-02
1970	6.52E-03
1971	1.55E-03
1972	8.40E-03
1973	6.06E-04
1974	2.90E-04
1975	5.37E-04

a. Nonvolatile beta curies are based on beta counting of air sampler filters, using $^{210}\text{PbBi}$ in secular equilibrium as a calibration source. These values are not corrected for decay.

TABLE 7 (Continued)

³H^a

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955	2.66E 04	2.66E 04	2.59E 04	0.0	2.59E 04
1956	4.50E 05	4.77E 05	4.62E 05	0.0	4.62E 05
1957	1.18E 05	1.66E 06	1.58E 06	0.0	1.58E 06
1958	2.35E 06	4.01E 06	3.78E 06	0.0	3.78E 06
1959	9.98E 05	5.00E 06	4.55E 06	0.0	4.55E 06
1960	9.09E 05	5.91E 06	5.18E 06	0.0	5.18E 06
1961	8.46E 05	6.76E 06	5.72E 06	0.0	5.72E 06
1962	1.04E 06	7.80E 06	6.42E 06	0.0	6.42E 06
1963	1.07E 06	8.87E 06	7.11E 06	0.0	7.11E 06
1964	1.47E 06	1.03E 07	8.15E 06	0.0	8.15E 06
1965	7.06E 05	1.10E 07	8.39E 06	0.0	8.39E 06
1966	6.10E 05	1.17E 07	8.52E 06	0.0	8.52E 06
1967	6.42E 05	1.23E 07	8.68E 06	0.0	8.68E 06
1968	6.98E 05	1.30E 07	8.89E 06	0.0	8.89E 06
1969	4.58E 05	1.35E 07	8.85E 06	0.0	8.85E 06
1970	4.69E 05	1.39E 07	8.82E 06	0.0	8.82E 06
1971	5.86E 05	1.45E 07	8.91E 06	0.0	8.91E 06
1972	7.85E 05	1.53E 07	9.18E 06	0.0	9.18E 06
1973	5.52E 05	1.58E 07	9.22E 06	0.0	9.22E 06
1974	9.06E 05	1.68E 07	9.59E 06	0.0	9.59E 06
1975	4.88E 05	1.72E 07	9.54E 06	0.0	9.54E 06

a. Tritium is assumed to be released as the oxide form, or rapidly assumes that almost all of the tritium released is now off-site.

TABLE 7 (Continued)

 $^{14}\text{C}^a$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NU DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954	0.0	0.0	0.0	0.0	0.0
1955	8.30E 01	8.30E 01	8.30E 01	0.0	8.30E 01
1956	8.40E 01	1.67E 02	1.67E 02	0.0	1.67E 02
1957	8.40E 01	2.51E 02	2.51E 02	0.0	2.51E 02
1958	8.40E 01	3.35E 02	3.35E 02	0.0	3.35E 02
1959	1.38E 02	4.73E 02	4.73E 02	0.0	4.73E 02
1960	1.38E 02	6.11E 02	6.11E 02	0.0	6.11E 02
1961	1.38E 02	7.49E 02	7.49E 02	0.0	7.49E 02
1962	1.38E 02	8.87E 02	8.87E 02	0.0	8.87E 02
1963	1.38E 02	1.03E 03	1.02E 03	0.0	1.02E 03
1964	1.10E 02	1.14E 03	1.13E 03	0.0	1.13E 03
1965	1.10E 02	1.25E 03	1.24E 03	0.0	1.24E 03
1966	1.10E 02	1.36E 03	1.35E 03	0.0	1.35E 03
1967	1.10E 02	1.47E 03	1.46E 03	0.0	1.46E 03
1968	8.70E 01	1.55E 03	1.55E 03	0.0	1.55E 03
1969	8.70E 01	1.64E 03	1.64E 03	0.0	1.64E 03
1970	8.80E 01	1.73E 03	1.73E 03	0.0	1.73E 03
1971	8.70E 01	1.81E 03	1.81E 03	0.0	1.81E 03
1972	8.70E 01	1.90E 03	1.90E 03	0.0	1.90E 03
1973	8.70E 01	1.99E 03	1.99E 03	0.0	1.99E 03
1974	8.01E 01	2.07E 03	2.07E 03	0.0	2.07E 03
1975	6.60E 01	2.13E 03	2.13E 03	0.0	2.13E 03

a. Curie release information provided for Carbon-14 is estimated.

TABLE 7 (Continued)



YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			OFF SITE
		NO DECAY	DECAY CORRECTED	ON SITE	
1954	5.00E 04	5.00E 04	0.0	0.0	0.0
1955	1.40E 05	1.90E 05	0.0	0.0	0.0
1956	2.50E 05	4.40E 05	0.0	0.0	0.0
1957	2.90E 05	7.30E 05	0.0	0.0	0.0
1958	3.40E 05	1.07E 06	0.0	0.0	0.0
1959	4.40E 05	1.51E 06	0.0	0.0	0.0
1960	4.00E 05	1.91E 06	0.0	0.0	0.0
1961	4.20E 05	2.33E 06	0.0	0.0	0.0
1962	4.30E 05	2.76E 06	0.0	0.0	0.0
1963	4.50E 05	3.21E 06	0.0	0.0	0.0
1964	3.70E 05	3.58E 06	0.0	0.0	0.0
1965	2.70E 05	3.85E 06	0.0	0.0	0.0
1966	2.80E 05	4.13E 06	0.0	0.0	0.0
1967	3.20E 05	4.45E 06	0.0	0.0	0.0
1968	2.20E 05	4.67E 06	0.0	0.0	0.0
1969	1.40E 05	4.81E 06	0.0	0.0	0.0
1970	1.10E 05	4.92E 06	0.0	0.0	0.0
1971	1.40E 05	5.06E 06	0.0	0.0	0.0
1972	1.70E 05	5.23E 06	0.0	0.0	0.0
1973	1.82E 05	5.41E 06	0.0	0.0	0.0
1974	1.08E 05	5.52E 06	0.0	0.0	0.0
1975	6.50E 04	5.59E 06	0.0	0.0	0.0

a. Short-lived noble gases released from reactors were not routinely analyzed for inventory purposes before 1971. Curie releases shown before this date are based on neutron flux in the thermal shield of the reactors where the argon-41 is produced by activation of naturally occurring argon-40.

TABLE 7 (Continued)

⁶⁰CoCUMULATIVE RELEASE INVENTORY, CI

<u>YEAR</u>	<u>ANNUAL RELEASE, CI</u>	<u>NO DECAY</u>	<u>DECAY CORRECTED</u>	<u>ON SITE</u>	<u>OFF SITE</u>
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968	3.93E-02	3.93E-02	3.68E-02	3.68E-03	3.31E-02
1969	1.10E-02	5.03E-02	4.26E-02	4.26E-03	3.83E-02
1970	2.75E-03	5.30E-02	3.99E-02	3.99E-03	3.59E-02
1971	2.22E-02	7.52E-02	5.57E-02	5.57E-03	5.02E-02
1972	7.12E-03	8.24E-02	5.55E-02	5.55E-03	5.00E-02
1973	1.78E-03	8.41E-02	5.03E-02	5.03E-03	4.53E-02
1974	3.87E-03	8.80E-02	4.78E-02	4.78E-03	4.30E-02
1975	1.10E-03	8.91E-02	4.29E-02	4.29E-03	3.86E-02

TABLE 7 (Continued)

 $^{85m}Kr^{\alpha}$

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			
		NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954	4.00E 01	4.00E 01	0.0	0.0	0.0
1955	1.00E 02	1.40E 02	0.0	0.0	0.0
1956	3.00E 02	4.40E 02	0.0	0.0	0.0
1957	7.00E 02	1.14E 03	0.0	0.0	0.0
1958	1.80E 03	2.94E 03	0.0	0.0	0.0
1959	3.40E 03	6.34E 03	0.0	0.0	0.0
1960	4.60E 03	1.09E 04	0.0	0.0	0.0
1961	2.40E 03	1.33E 04	0.0	0.0	0.0
1962	1.80E 03	1.51E 04	0.0	0.0	0.0
1963	6.80E 03	2.19E 04	0.0	0.0	0.0
1964	9.00E 02	2.28E 04	0.0	0.0	0.0
1965	2.00E 03	2.48E 04	0.0	0.0	0.0
1966	2.40E 03	2.72E 04	0.0	0.0	0.0
1967	3.32E 04	6.04E 04	0.0	0.0	0.0
1968	1.26E 04	7.30E 04	0.0	0.0	0.0
1969	5.40E 03	7.84E 04	0.0	0.0	0.0
1970	2.40E 03	8.08E 04	0.0	0.0	0.0
1971	3.10E 03	8.39E 04	0.0	0.0	0.0
1972	7.33E 03	9.13E 04	0.0	0.0	0.0
1973	6.52E 03	9.78E 04	0.0	0.0	0.0
1974	1.35E 03	9.91E 04	0.0	0.0	0.0
1975	3.70E 02	9.95E 04	0.0	0.0	0.0

a. Short-lived noble gases released from reactors were not routinely analyzed for inventory purposes before 1971. Curie releases shown before this date are based on fission product content of reactor D₂O coolant.

TABLE 7 (Continued)

 $^{85}Kr\alpha$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971	4.80E 05	4.80E 05	4.65E 05	0.0	4.65E 05
1972	6.05E 05	1.09E 06	1.02E 06	0.0	1.02E 06
1973	7.65E 05	1.85E 06	1.70E 06	0.0	1.70E 06
1974	5.00E 05	2.35E 06	2.08E 06	0.0	2.08E 06
1975	5.20E 05	2.87E 06	2.45E 06	0.0	2.45E 06

a. Krypton-85 disposition before March 1, 1971 is not shown for security classification reasons.

TABLE 7 (Continued)

 $^{87}Kr^{\alpha}$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971					
1972	2.50E 03	2.50E 03	0.0	0.0	0.0
1973	2.03E 03	4.53E 03	0.0	0.0	0.0
1974	6.38E 02	5.17E 03	0.0	0.0	0.0
1975	1.17E 03	6.34E 03	0.0	0.0	0.0

a. Short-lived noble gases released from reactors were not routinely analyzed for inventory purposes before 1971.

TABLE 7 (Continued)

 $^{88}Kr^{\alpha}$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI		
		NO DECAY	DECAY CORRECTED	ON SITE
1954	4.00E 01	4.00E 01	0.0	0.0
1955	1.00E 02	1.40E 02	0.0	0.0
1956	2.00E 02	3.40E 02	0.0	0.0
1957	6.00E 02	9.40E 02	0.0	0.0
1958	1.70E 03	2.64E 03	0.0	0.0
1959	3.20E 03	5.84E 03	0.0	0.0
1960	4.80E 03	1.06E 04	0.0	0.0
1961	2.30E 03	1.29E 04	0.0	0.0
1962	1.70E 03	1.46E 04	0.0	0.0
1963	6.30E 03	2.09E 04	0.0	0.0
1964	5.00E 02	2.14E 04	0.0	0.0
1965	1.20E 03	2.26E 04	0.0	0.0
1966	1.50E 03	2.41E 04	0.0	0.0
1967	2.04E 04	4.45E 04	0.0	0.0
1968	8.10E 03	5.26E 04	0.0	0.0
1969	3.50E 03	5.61E 04	0.0	0.0
1970	1.60E 03	5.77E 04	0.0	0.0
1971	1.70E 03	5.94E 04	0.0	0.0
1972	4.20E 03	6.36E 04	0.0	0.0
1973	7.38E 03	7.10E 04	0.0	0.0
1974	1.41E 03	7.24E 04	0.0	0.0
1975	8.60E 02	7.33E 04	0.0	0.0

a. Short-lived noble gases released from reactors were not routinely analyzed for inventory purposes before 1971. Curie releases shown before this date are based on fission product content of reactor D₂O coolant.

TABLE 7 (Continued)

 $^{89,90}\text{Sr}^a$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955	4.26E-01	4.26E-01	4.26E-01	4.26E-02	3.83E-01
1956	5.68E-02	4.83E-01	4.83E-01	4.83E-02	4.35E-01
1957	2.12E-02	5.04E-01	5.04E-01	5.04E-02	4.54E-01
1958	2.36E-02	5.28E-01	5.28E-01	5.28E-02	4.75E-01
1959	3.14E-01	8.42E-01	8.42E-01	8.42E-02	7.57E-01
1960	5.30E-02	8.95E-01	8.95E-01	8.95E-02	8.05E-01
1961	4.10E-02	9.36E-01	9.36E-01	9.36E-02	8.42E-01
1962	3.30E-02	9.69E-01	9.69E-01	9.69E-02	8.72E-01
1963	3.54E-02	1.00E 00	1.00E 00	1.00E-01	9.04E-01
1964	3.95E-02	1.04E 00	1.04E 00	1.04E-01	9.39E-01
1965	1.95E-02	1.06E 00	1.06E 00	1.06E-01	9.57E-01
1966	2.12E-02	1.08E 00	1.08E 00	1.08E-01	9.76E-01
1967	1.41E-02	1.10E 00	1.10E 00	1.10E-01	9.88E-01
1968	3.40E-02	1.13E 00	1.13E 00	1.13E-01	1.02E 00
1969	1.15E-01	1.25E 00	1.25E 00	1.25E-01	1.12E 00
1970	5.60E-02	1.30E 00	1.30E 00	1.30E-01	1.17E 00
1971	3.62E-02	1.34E 00	1.34E 00	1.34E-01	1.21E 00
1972	1.34E-01	1.47E 00	1.47E 00	1.47E-01	1.33E 00
1973	1.40E-02	1.49E 00	1.49E 00	1.49E-01	1.34E 00
1974	1.11E-02	1.50E 00	1.50E 00	1.50E-01	1.35E 00
1975	5.00E-03	1.50E 00	1.50E 00	1.50E-01	1.35E 00

a. Total strontium is strontium-89 plus strontium-90.

TABLE 7 (Continued)

 $^{95}\text{Zr}^{\alpha}$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NC DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971	1.35E-01	1.35E-01	1.96E-02	1.96E-03	1.76E-02
1972	1.51E-01	2.86E-01	2.23E-02	2.23E-03	2.01E-02
1973	6.93E-02	3.55E-01	1.05E-02	1.05E-03	9.46E-03
1974	3.34E-02	3.89E-01	5.06E-03	5.06E-04	4.55E-03
1975	1.40E-02	4.03E-01	2.13E-03	2.13E-04	1.92E-03

a. Where ^{95}Zr results are available separately, they are not included in the $^{95}\text{Nb}-^{95}\text{Zr}$ summary.

TABLE 7 (Continued)

 ^{95}Nb α

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			
		NC DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971	3.46E-01	3.46E-01	9.40E-03	9.40E-04	8.46E-03
1972	2.02E-01	5.48E-01	5.50E-03	5.50E-04	4.95E-03
1973	7.55E-02	6.23E-01	2.06E-03	2.06E-04	1.85E-03
1974	1.23E-01	7.46E-01	3.34E-03	3.34E-04	3.01E-03
1975	2.40E-02	7.70E-01	6.55E-04	6.55E-05	5.89E-04

a. Where ^{95}Nb results are available separately, they are not included in the $^{95}\text{Nb}-^{95}\text{Zr}$ summary.

TABLE 7 (Continued)

 $^{95}\text{Nb-Zr}^{\alpha}$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955					
1956					
1957					
1958					
1959					
1960	2.12E-01	2.12E-01	3.07E-02	3.07E-03	2.77E-02
1961	2.99E-01	5.11E-01	4.40E-02	4.40E-03	3.96E-02
1962	1.74E-01	6.85E-01	2.62E-02	2.62E-03	2.35E-02
1963	1.50E-01	8.35E-01	2.23E-02	2.23E-03	2.01E-02
1964	2.23E-01	1.06E 00	3.28E-02	3.28E-03	2.95E-02
1965	2.16E-01	1.27E 00	3.20E-02	3.20E-03	2.88E-02
1966	2.06E-01	1.48E 00	3.05E-02	3.05E-03	2.75E-02
1967	2.10E-01	1.69E 00	3.11E-02	3.11E-03	2.80E-02
1968	3.11E-01	2.00E 00	4.57E-02	4.57E-03	4.12E-02
1969	2.85E-01	2.29E 00	4.23E-02	4.23E-03	3.81E-02
1970	2.70E-01	2.56E 00	4.00E-02	4.00E-03	3.60E-02
1971		2.56E 00	8.42E-04	8.42E-05	7.58E-04
1972		2.56E 00	1.77E-05	1.77E-06	1.59E-05
1973		2.56E 00	3.72E-07	3.72E-08	3.35E-07
1974		2.56E 00	7.83E-09	7.83E-10	7.04E-09
1975		2.56E 00	1.65E-10	1.65E-11	1.48E-10

a. Zirconium-95 and niobium-95 reported together in 1960-1970. Summary does not include ^{95}Zr or ^{95}Nb results reported on the previous pages.

TABLE 7 (Continued)

 ^{103}Ru

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971	2.73E 00	2.73E 00	1.12E-01	1.12E-02	1.01E-01
1972	3.85E 00	6.58E 00	1.58E-01	1.58E-02	1.42E-01
1973	1.88E 00	8.46E 00	7.72E-02	7.72E-03	6.95E-02
1974	8.82E-03	8.47E 00	4.90E-04	4.90E-05	4.41E-04
1975	1.80E-03	8.47E 00	7.45E-05	7.45E-06	6.70E-05

a. Where ^{103}Ru results are available separately, they are not included in the $^{103}, ^{106}\text{Ru}$ summary.

YEAR					
<hr/>					
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969	4.11E 00	4.11E 00	2.92E 00	2.92E-01	2.62E 00
1970	6.78E-01	4.79E 00	1.95E 00	1.95E-01	1.75E 00
1971	2.95E 00	7.74E 00	3.08E 00	3.08E-01	2.77E 00
1972	3.47E 00	1.12E 01	4.01E 00	4.01E-01	3.61E 00
1973	1.31E 00	1.25E 01	2.95E 00	2.95E-01	2.65E 00
1974	1.42E-01	1.27E 01	1.59E 00	1.59E-01	1.43E 00
1975	3.70E-02	1.27E 01	8.25E-01	8.25E-02	7.43E-01

a. Where ^{106}Ru results are available separately, they are not included in the $^{103}, ^{106}\text{Ru}$ summary.

TABLE 7 (Continued)

 $^{103,106}\text{Ru}^\alpha$

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			
		NO DECAY	DECAY CORRECTED	ON SITE.	OFF SITE
1954					
1955	2.51E 01	2.51E 01	1.78E 01	1.78E 00	1.60E 01
1956	6.34E 00	3.14E 01	1.35E 01	1.35E 00	1.21E 01
1957	1.24E 00	3.27E 01	7.66E 00	7.66E-01	6.89E 00
1958	6.17E-01	3.33E 01	4.29E 00	4.29E-01	3.86E 00
1959	9.99E 00	4.33E 01	9.25E 00	9.25E-01	8.33E 00
1960	8.85E 00	5.21E 01	1.09E 01	1.09E 00	9.84E 00
1961	3.91E 00	5.60E 01	8.28E 00	8.28E-01	7.45E 00
1962	2.78E 00	5.88E 01	6.14E 00	6.14E-01	5.53E 00
1963	3.89E 00	6.27E 01	5.85E 00	5.85E-01	5.27E 00
1964	2.62E 00	6.53E 01	4.81E 00	4.81E-01	4.33E 00
1965	2.76E 00	6.81E 01	4.38E 00	4.38E-01	3.94E 00
1966	4.59E 00	7.27E 01	5.46E 00	5.46E-01	4.92E 00
1967	4.20E-01	7.31E 01	3.05E 00	3.05E-01	2.74E 00
1968	2.00E 01	9.31E 01	1.57E 01	1.57E 00	1.42E 01
1969		9.31E 01	7.92E 00	7.92E-01	7.13E 00
1970		9.31E 01	3.99E 00	3.99E-01	3.59E 00
1971		9.31E 01	2.01E 00	2.01E-01	1.81E 00
1972		9.31E 01	1.01E 00	1.01E-01	9.10E-01
1973		9.31E 01	5.09E-01	5.09E-02	4.58E-01
1974		9.31E 01	2.56E-01	2.56E-02	2.31E-01
1975		9.31E 01	1.29E-01	1.29E-02	1.16E-01

a. Ruthenium-103 and ruthenium-106 measured together in 1955-1960. Summary does not include ^{103}Ru or ^{106}Ru results reported on previous pages.

TABLE 7 (Continued)

 $I^{129} \alpha$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954	0.0	0.0	0.0	0.0	0.0
1955	2.12E-01	2.12E-01	2.12E-01	2.12E-02	1.91E-01
1956	2.12E-01	4.24E-01	4.24E-01	4.24E-02	3.82E-01
1957	2.12E-01	6.36E-01	6.36E-01	6.36E-02	5.72E-01
1958	2.12E-01	8.48E-01	8.48E-01	8.48E-02	7.63E-01
1959	2.12E-01	1.06E 00	1.06E 00	1.06E-01	9.54E-01
1960	2.12E-01	1.27E 00	1.27E 00	1.27E-01	1.14E 00
1961	2.12E-01	1.48E 00	1.48E 00	1.48E-01	1.34E 00
1962	2.12E-01	1.70E 00	1.70E 00	1.70E-01	1.53E 00
1963	2.12E-01	1.91E 00	1.91E 00	1.91E-01	1.72E 00
1964	2.12E-01	2.12E 00	2.12E 00	2.12E-01	1.91E 00
1965	2.12E-01	2.33E 00	2.33E 00	2.33E-01	2.10E 00
1966	2.12E-01	2.54E 00	2.54E 00	2.54E-01	2.29E 00
1967	2.12E-01	2.76E 00	2.76E 00	2.76E-01	2.48E 00
1968	2.12E-01	2.97E 00	2.97E 00	2.97E-01	2.67E 00
1969	2.12E-01	3.18E 00	3.18E 00	3.18E-01	2.86E 00
1970	2.12E-01	3.39E 00	3.39E 00	3.39E-01	3.05E 00
1971	2.12E-01	3.60E 00	3.60E 00	3.60E-01	3.24E 00
1972	2.12E-01	3.82E 00	3.82E 00	3.82E-01	3.43E 00
1973	2.12E-01	4.03E 00	4.03E 00	4.03E-01	3.63E 00
1974	1.70E-01	4.20E 00	4.20E 00	4.20E-01	3.78E 00
1975	1.40E-01	4.34E 00	4.34E 00	4.34E-01	3.90E 00

a. Curie release data provided for Iodine-129 is estimated from production values for 1955-1972, 1974, and 1975.

TABLE 7 (Continued)

¹³¹I

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955	6.92E 01	6.92E 01	1.04E-05	1.04E-06	9.37E-06
1956	1.58E 03	1.65E 03	2.38E-04	2.38E-05	2.14E-04
1957	2.92E 02	1.94E 03	4.39E-05	4.39E-06	3.95E-05
1958	1.99E 01	1.96E 03	2.99E-06	2.99E-07	2.69E-06
1959	1.62E 02	2.12E 03	2.44E-05	2.44E-06	2.19E-05
1960	7.32E 00	2.13E 03	1.10E-06	1.10E-07	9.91E-07
1961	1.62E 02	2.29E 03	2.44E-05	2.44E-06	2.19E-05
1962	1.66E 01	2.31E 03	2.50E-06	2.50E-07	2.25E-06
1963	4.81E 00	2.31E 03	7.23E-07	7.23E-08	6.51E-07
1964	1.16E 01	2.33E 03	1.74E-06	1.74E-07	1.57E-06
1965	1.80E 01	2.34E 03	2.71E-06	2.71E-07	2.44E-06
1966	3.16E 01	2.38E 03	4.75E-06	4.75E-07	4.28E-06
1967	2.01E 01	2.40E 03	3.02E-06	3.02E-07	2.72E-06
1968	2.21E 01	2.42E 03	3.32E-06	3.32E-07	2.99E-06
1969	3.59E 01	2.45E 03	5.40E-06	5.40E-07	4.86E-06
1970	3.44E 01	2.49E 03	5.17E-06	5.17E-07	4.66E-06
1971	2.66E 01	2.51E 03	4.00E-06	4.00E-07	3.60E-06
1972	2.73E 00	2.52E 03	4.11E-07	4.11E-08	3.70E-07
1973	1.85E 00	2.52E 03	2.78E-07	2.78E-08	2.50E-07
1974	1.91E 00	2.52E 03	2.87E-07	2.87E-08	2.59E-07
1975	1.20E-01	2.52E 03	1.80E-08	1.80E-09	1.62E-08

A-34

TABLE 7 (Continued)

 $^{131m}Xe^{\alpha}$

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			OFF SITE
		NO DECAY	DECAY CORRECTED	ON SITE	
1954					
1955					
1956					
1957					
1958					
1959					
1960	6.90E 02	6.90E 02	1.53E-02	0.0	1.53E-02
1961	5.00E 02	1.19E 03	1.11E-02	0.0	1.11E-02
1962	2.90E 02	1.48E 03	6.44E-03	0.0	6.44E-03
1963	1.40E 02	1.62E 03	3.11E-03	0.0	3.11E-03
1964	1.70E 02	1.79E 03	3.78E-03	0.0	3.78E-03
1965	6.10E 02	2.40E 03	1.35E-02	0.0	1.35E-02
1966	2.60E 02	2.66E 03	5.77E-03	0.0	5.77E-03
1967	1.89E 03	4.55E 03	4.20E-02	0.0	4.20E-02
1968	9.30E 02	5.48E 03	2.07E-02	0.0	2.07E-02
1969	8.50E 02	6.33E 03	1.89E-02	0.0	1.89E-02
1970	1.00E 03	7.33E 03	2.22E-02	0.0	2.22E-02
1971	1.10E 03	8.43E 03	2.44E-02	0.0	2.44E-02
1972	2.92E 02	8.72E 03	6.49E-03	0.0	6.49E-03
1973	5.11E 02	9.23E 03	1.13E-02	0.0	1.13E-02
1974	1.35E 02	9.37E 03	3.00E-03	0.0	3.00E-03
1975	5.80E 00	9.37E 03	1.29E-04	0.0	1.29E-04

a. Short-lived noble gases released from reactors were not routinely analyzed for inventory purposes before 1971. Curie releases shown before this date are based on fission product content of reactor D₂O coolant.

TABLE 7 (Continued)

 $^{133}Xe^a$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NC DECAY	DECAY CORRECTED	CN SITE	CFF SITE
1954	6.00E 01	6.00E 01	2.28E-09	0.0	2.28E-09
1955	2.00E 02	2.60E 02	7.59E-09	0.0	7.59E-09
1956	4.00E 02	6.60E 02	1.52E-08	0.0	1.52E-08
1957	1.00E 02	7.60E 02	3.79E-09	0.0	3.79E-09
1958	2.60E 03	3.36E 03	9.86E-08	0.0	9.86E-08
1959	5.00E 03	8.36E 03	1.90E-07	0.0	1.90E-07
1960	7.41E 03	1.58E 04	2.81E-07	0.0	2.81E-07
1961	4.02E 03	1.98E 04	1.53E-07	0.0	1.53E-07
1962	2.60E 03	2.24E 04	9.86E-08	0.0	9.86E-08
1963	8.40E 03	3.08E 04	3.19E-07	0.0	3.19E-07
1964	2.00E 03	3.28E 04	7.59E-08	0.0	7.59E-08
1965	4.22E 03	3.70E 04	1.60E-07	0.0	1.60E-07
1966	4.43E 04	8.13E 04	1.68E-06	0.0	1.68E-06
1967	1.48E 05	2.29E 05	5.62E-06	0.0	5.62E-06
1968	4.92E 04	2.79E 05	1.87E-06	0.0	1.87E-06
1969	2.16E 04	3.00E 05	8.20E-07	0.0	8.20E-07
1970	1.80E 04	3.18E 05	6.83E-07	0.0	6.83E-07
1971	2.60E 04	3.44E 05	9.86E-07	0.0	9.86E-07
1972	3.90E 04	3.83E 05	1.48E-06	0.0	1.48E-06
1973	2.24E 04	4.06E 05	8.50E-07	0.0	8.50E-07
1974	5.51E 03	4.11E 05	2.09E-07	0.0	2.09E-07
1975	1.07E 03	4.12E 05	4.06E-08	0.0	4.06E-08

a. Short-lived noble gases released from reactors were not routinely analyzed for inventory purposes before 1971. Curie releases shown before this date are based on fission product content of reactor D₂O coolant.

TABLE 7 (Continued)

 $^{135}Xe^{\alpha}$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954	8.00E 01	8.00E 01	0.0	0.0	0.0
1955	3.00E 02	3.80E 02	0.0	0.0	0.0
1956	5.00E 02	8.80E 02	0.0	0.0	0.0
1957	1.00E 02	9.80E 02	0.0	0.0	0.0
1958	4.00E 03	4.98E 03	0.0	0.0	0.0
1959	6.50E 03	1.15E 04	0.0	0.0	0.0
1960	9.60E 03	2.11E 04	0.0	0.0	0.0
1961	4.70E 03	2.58E 04	0.0	0.0	0.0
1962	3.40E 03	2.92E 04	0.0	0.0	0.0
1963	1.20E 04	4.12E 04	0.0	0.0	0.0
1964	8.00E 02	4.20E 04	0.0	0.0	0.0
1965	1.80E 03	4.38E 04	0.0	0.0	0.0
1966	2.10E 03	4.59E 04	0.0	0.0	0.0
1967	2.96E 04	7.55E 04	0.0	0.0	0.0
1968	1.24E 04	8.79E 04	0.0	0.0	0.0
1969	5.40E 03	9.33E 04	0.0	0.0	0.0
1970	2.60E 03	9.59E 04	0.0	0.0	0.0
1971	4.70E 03	1.01E 05	0.0	0.0	0.0
1972	1.20E 04	1.13E 05	0.0	0.0	0.0
1973	9.38E 03	1.22E 05	0.0	0.0	0.0
1974	2.18E 03	1.24E 05	0.0	0.0	0.0
1975	7.30E 02	1.25E 05	0.0	0.0	0.0

a. Short-lived noble gases released from reactors were not routinely analyzed for inventory purposes before 1971. Curie releases shown before this date are based on fission product content of reactor D₂O coolant.

TABLE 7 (Continued)

 $^{134}\text{Cs}^{\alpha}$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971	5.08E-03	5.08E-03	4.29E-03	4.29E-04	3.86E-03
1972	1.55E-03	6.63E-03	4.38E-03	4.38E-04	3.94E-03
1973	0.0	6.63E-03	3.13E-03	3.13E-04	2.81E-03
1974	3.00E-05	6.66E-03	2.26E-03	2.26E-04	2.03E-03
1975	2.00E-04	6.86E-03	1.78E-03	1.78E-04	1.60E-03

a. Where ^{134}Cs results are available separately, they are not included in the ^{137}Cs summary.

TABLE 7 (Continued)

 $^{137}\text{Cs}^{\alpha}$

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			
		NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955	1.35E 00	1.35E 00	1.33E 00	1.33E-01	1.20E 00
1956	2.39E-01	1.59E 00	1.54E 00	1.54E-01	1.39E 00
1957	6.27E-02	1.65E 00	1.57E 00	1.57E-01	1.41E 00
1958	2.59E-02	1.68E 00	1.56E 00	1.56E-01	1.40E 00
1959	1.38E-01	1.82E 00	1.66E 00	1.66E-01	1.49E 00
1960	1.24E-01	1.94E 00	1.74E 00	1.74E-01	1.57E 00
1961	4.80E-02	1.99E 00	1.75E 00	1.75E-01	1.58E 00
1962	3.70E-02	2.02E 00	1.75E 00	1.75E-01	1.57E 00
1963	2.52E-02	2.05E 00	1.73E 00	1.73E-01	1.56E 00
1964	6.67E-02	2.12E 00	1.76E 00	1.76E-01	1.58E 00
1965	1.77E-02	2.13E 00	1.74E 00	1.74E-01	1.56E 00
1966	4.82E-02	2.18E 00	1.75E 00	1.75E-01	1.57E 00
1967	1.81E-02	2.20E 00	1.72E 00	1.72E-01	1.55E 00
1968	4.03E-02	2.24E 00	1.72E 00	1.72E-01	1.55E 00
1969	8.53E-02	2.33E 00	1.77E 00	1.77E-01	1.59E 00
1970	4.15E-02	2.37E 00	1.77E 00	1.77E-01	1.59E 00
1971	9.33E-03	2.38E 00	1.74E 00	1.74E-01	1.57E 00
1972	2.44E-02	2.40E 00	1.72E 00	1.72E-01	1.55E 00
1973	2.58E-03	2.40E 00	1.69E 00	1.69E-01	1.52E 00
1974	1.32E-03	2.41E 00	1.65E 00	1.65E-01	1.48E 00
1975	1.10E-03	2.41E 00	1.61E 00	1.61E-01	1.45E 00

a. During 1955-1970, ^{137}Cs analyses included ^{134}Cs . After 1970, ^{134}Cs releases are not included in the ^{137}Cs release report.

TABLE 7 (Continued)

 $^{141}\text{Ce}^a$

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			OFF SITE
		NO DECAY	DECAY CORRECTED	ON SITE	
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971	2.08E-02	2.08E-02	4.25E-04	4.25E-05	3.83E-04
1972	1.34E-02	3.42E-02	2.74E-04	2.74E-05	2.47E-04
1973	3.85E-03	3.80E-02	7.88E-05	7.88E-06	7.09E-05
1974	9.80E-04	3.90E-02	2.01E-05	2.01E-06	1.81E-05
1975	2.80E-04	3.93E-02	5.73E-06	5.73E-07	5.16E-06

a. Where ^{141}Ce results are available separately, they are not included in the $^{141},^{144}\text{Ce}$ summary.

TABLE 7 (Continued)

 $^{144}\text{Ce}^{\alpha}$

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			
		NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971	1.33E-01	1.33E-01	8.52E-02	8.52E-03	7.67E-02
1972	3.29E-01	4.62E-01	2.46E-01	2.46E-02	2.21E-01
1973	3.90E-02	5.01E-01	1.26E-01	1.26E-02	1.13E-01
1974	2.19E-02	5.23E-01	6.58E-02	6.58E-03	5.92E-02
1975	1.60E-02	5.39E-01	3.73E-02	3.73E-03	3.35E-02

a. Where ^{144}Ce results are available separately, they are not shown in the $^{141}, ^{144}\text{Ce}$ summary.

TABLE 7 (Continued)

 $^{141},^{144}\text{Ce}^a$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955					
1956					
1957					
1958					
1959					
1960	2.43E-01	2.43E-01	1.56E-01	1.56E-02	1.40E-01
1961	2.84E-01	5.27E-01	2.46E-01	2.46E-02	2.21E-01
1962	2.12E-01	7.39E-01	2.37E-01	2.37E-02	2.13E-01
1963	2.39E-01	9.78E-01	2.50E-01	2.50E-02	2.25E-01
1964	3.20E-01	1.30E 00	3.08E-01	3.08E-02	2.77E-01
1965	2.40E-01	1.54E 00	2.80E-01	2.80E-02	2.52E-01
1966	1.75E-01	1.71E 00	2.27E-01	2.27E-02	2.04E-01
1967	9.30E-02	1.81E 00	1.53E-01	1.53E-02	1.37E-01
1968	5.50E-01	2.36E 00	4.15E-01	4.15E-02	3.74E-01
1969	8.11E-01	3.17E 00	6.90E-01	6.90E-02	6.21E-01
1970	2.28E-01	3.39E 00	4.29E-01	4.29E-02	3.86E-01
1971		3.39E 00	1.76E-01	1.76E-02	1.59E-01
1972		3.39E 00	7.23E-02	7.23E-03	6.51E-02
1973		3.39E 00	2.97E-02	2.97E-03	2.67E-02
1974		3.39E 00	1.22E-02	1.22E-03	1.10E-02
1975		3.39E 00	5.00E-03	5.00E-04	4.50E-03

a. ^{141}Ce and ^{144}Ce reported together in 1960-1970. This summary does not include ^{141}Ce or ^{144}Ce releases reported on the previous pages.

TABLE 7 (Continued)

 $^{235}, 238\text{U}^\alpha$

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			
		NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955	3.06E-01	3.06E-01	3.06E-01	1.53E-01	1.53E-01
1956	1.19E-01	4.25E-01	4.25E-01	2.12E-01	2.12E-01
1957	2.25E-03	4.27E-01	4.27E-01	2.14E-01	2.14E-01
1958	1.60E-03	4.29E-01	4.29E-01	2.14E-01	2.14E-01
1959	7.15E-03	4.36E-01	4.36E-01	2.18E-01	2.18E-01
1960	2.00E-02	4.56E-01	4.56E-01	2.28E-01	2.28E-01
1961	1.02E-02	4.66E-01	4.66E-01	2.33E-01	2.33E-01
1962	8.86E-03	4.75E-01	4.75E-01	2.38E-01	2.38E-01
1963	3.15E-02	5.07E-01	5.07E-01	2.53E-01	2.53E-01
1964	5.55E-02	5.62E-01	5.62E-01	2.81E-01	2.81E-01
1965	5.18E-02	6.14E-01	6.14E-01	3.07E-01	3.07E-01
1966	2.06E-02	6.34E-01	6.34E-01	3.17E-01	3.17E-01
1967	1.92E-02	6.54E-01	6.54E-01	3.27E-01	3.27E-01
1968	2.67E-02	6.80E-01	6.80E-01	3.40E-01	3.40E-01
1969	6.87E-02	7.49E-01	7.49E-01	3.75E-01	3.75E-01
1970	1.66E-02	7.66E-01	7.66E-01	3.83E-01	3.83E-01
1971	5.17E-03	7.71E-01	7.71E-01	3.85E-01	3.85E-01
1972	7.73E-03	7.79E-01	7.79E-01	3.89E-01	3.89E-01
1973	5.11E-03	7.84E-01	7.84E-01	3.92E-01	3.92E-01
1974	8.67E-03	7.92E-01	7.92E-01	3.96E-01	3.96E-01
1975	4.70E-03	7.97E-01	7.97E-01	3.99E-01	3.99E-01

a. Mixture of uranium isotopes, reported as alpha curies.

TABLE 7 (Continued)

 $^{238}\text{Pu}^\alpha$

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			OFF SITE
		NO DECAY	DECAY CORRECTED	ON SITE	
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966	8.00E-03	8.00E-03	7.97E-03	1.20E-03	6.77E-03
1967	2.60E-04	8.26E-03	8.16E-03	1.22E-03	6.94E-03
1968	1.00E-03	9.26E-03	9.09E-03	1.36E-03	7.73E-03
1969	5.59E-01	5.68E-01	5.66E-01	8.49E-02	4.81E-01
1970	2.08E-02	5.89E-01	5.82E-01	8.73E-02	4.95E-01
1971	2.15E-02	6.11E-01	5.99E-01	8.98E-02	5.09E-01
1972	1.66E-02	6.27E-01	6.11E-01	9.16E-02	5.19E-01
1973	2.21E-02	6.49E-01	6.28E-01	9.42E-02	5.34E-01
1974	4.74E-03	6.54E-01	6.27E-01	9.41E-02	5.33E-01
1975	2.00E-03	6.56E-01	6.24E-01	9.37E-02	5.31E-01

a. Where ^{238}Pu results are available separately, they are not included in the ^{239}Pu summary.

TABLE 7 (Continued)

 $^{239}Pu^{\alpha}$

CUMULATIVE INVENTORY, CI

YEAR	ANNUAL RELEASE, CI	NO DECAY	DECAY CORRECTED	ON SITE	OFF SITE
1954					
1955	2.66E 00 (b)	2.66E 00	2.66E 00	1.33E 00	1.33E 00
1956	3.10E-02	2.69E 00	2.69E 00	1.35E 00	1.35E 00
1957	4.28E-02	2.73E 00	2.73E 00	1.37E 00	1.37E 00
1958	2.09E-02	2.75E 00	2.75E 00	1.38E 00	1.38E 00
1959	2.39E-02	2.78E 00	2.78E 00	1.39E 00	1.39E 00
1960	7.10E-02	2.85E 00	2.85E 00	1.42E 00	1.42E 00
1961	1.18E-02	2.86E 00	2.86E 00	1.43E 00	1.43E 00
1962	1.11E-02	2.87E 00	2.87E 00	1.44E 00	1.44E 00
1963	3.50E-03	2.88E 00	2.88E 00	1.44E 00	1.44E 00
1964	5.56E-03	2.88E 00	2.88E 00	1.44E 00	1.44E 00
1965	1.65E-02	2.90E 00	2.90E 00	1.45E 00	1.45E 00
1966	1.01E-02	2.91E 00	2.91E 00	1.45E 00	1.45E 00
1967	1.03E-02	2.92E 00	2.92E 00	1.46E 00	1.46E 00
1968	5.67E-03	2.92E 00	2.92E 00	1.46E 00	1.46E 00
1969	6.03E-02	2.98E 00	2.98E 00	1.49E 00	1.49E 00
1970	9.19E-03	2.99E 00	2.99E 00	1.50E 00	1.50E 00
1971	8.35E-03	3.00E 00	3.00E 00	1.50E 00	1.50E 00
1972	3.79E-03	3.01E 00	3.00E 00	1.50E 00	1.50E 00
1973	1.45E-03	3.01E 00	3.01E 00	1.50E 00	1.50E 00
1974	2.94E-03	3.01E 00	3.01E 00	1.50E 00	1.50E 00
1975	5.20E-04	3.01E 00	3.01E 00	1.50E 00	1.50E 00

a. During 1955-1965, ^{239}Pu results also included ^{238}Pu . After 1965, ^{238}Pu is reported separately, and the releases shown above do not include ^{238}Pu after 1965.

b. See page III-7.

TABLE 7 (Continued)

 $^{242}\text{Cm}^\alpha$

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			OFF SITE
		NO DECAY	DECAY CORRECTED	ON SITE	
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971	2.34E-03	2.34E-03	1.08E-03	1.08E-04	9.69E-04
1972		2.34E-03	2.28E-04	2.28E-05	2.05E-04
1973		2.34E-03	4.82E-05	4.82E-06	4.34E-05
1974		2.34E-03	1.02E-05	1.02E-06	9.18E-06
1975		2.34E-03	2.16E-06	2.16E-07	1.94E-06

a. ^{242}Cm not routinely analyzed. The release is from an experimental operation.

TABLE 7 (Continued)

 ^{244}Cm

YEAR	ANNUAL RELEASE, CI	CUMULATIVE INVENTORY, CI			OFF SITE
		NU DECAY	DECAY CORRECTED	ON SITE	
1954					
1955					
1956					
1957					
1958					
1959					
1960					
1961					
1962					
1963					
1964	3.17E-02	3.17E-02	3.11E-02	1.55E-02	1.55E-02
1965	-	3.17E-02	2.99E-02	1.49E-02	1.49E-02
1966	-	3.17E-02	2.87E-02	1.44E-02	1.44E-02
1967	3.00E-02	6.17E-02	5.70E-02	2.85E-02	2.85E-02
1968	-	6.17E-02	5.48E-02	2.74E-02	2.74E-02
1969	2.11E-02	8.28E-02	7.34E-02	3.67E-02	3.67E-02
1970	9.10E-04	8.37E-02	7.15E-02	3.57E-02	3.57E-02
1971	7.00E-04	8.44E-02	6.94E-02	3.47E-02	3.47E-02
1972	3.90E-04	8.48E-02	6.71E-02	3.35E-02	3.35E-02
1973	3.60E-04	8.52E-02	6.48E-02	3.24E-02	3.24E-02
1974	3.90E-04	8.55E-02	6.27E-02	3.14E-02	3.14E-02
1975	-	8.55E-02	6.03E-02	3.01E-02	3.01E-02